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ABSTRACT

This descriptive study examined children's drawings and related language episodes to differentiate drawings exhibiting play from those exhibiting exploratory behavior. Drawings categorized as play were further analyzed to identify constructive and imaginary play. The play theory used as the basis of the study proposes that exploration and manipulation are prerequisites to meaningful play experiences. Because language development shares a cognitive basis with symbolic play, language episodes were used as possible indicators of children's intentional play not evident from actions alone. Four 4- and 5-year-olds participated. Data were collected through video tape, observation notes, and 120 drawings produced during 8 weekly 90-minute sessions. A child-centered, guided-discovery approach was used to introduce children to the art activities. Audiotapes were transcribed and checked against notes and videotapes to coordinate the children's language and actions. After analysis of the drawings and descriptive data, about 68 percent of the drawings were categorized as Meaningful Play (as opposed to Exploration or Manipulation), with about 43 percent categorized as Constructive Play and 25 percent as Imaginative Play. Four-year-olds had a higher percentage of their drawings categorized as Non-Play and a lower percentage categorized as Play than did 5-year-olds. Five-year-olds used Imaginative Play more often than 4-year-olds. The two older children exhibited imaginary and pretend play that included transformation of objects for constructive and pretense purposes. They also evidenced play with words, humor, and games. (Contains 27 references.) (KDFB)

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Play at the Art Table: A Study of Children's Play Behaviors While Drawing

Paper Presented at the Annual Conference of
The Association for the Study of Play

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Play at the Art Table:
A Study of Children's Play Behaviors While Drawing

Humans have in common the ancient, universal, human urge to draw (DiLeo, J.H., 1970). It is possibly related to the equally ancient and universal human urge for social interactions and communications, by verbal or other symbolic means. The ability to create symbols allows humans not only to communicate their knowledge but also to become familiar with their environment; the emergence of symbolic representation, an important part of an individual's ability to know their world (Werner & Kaplan, 1963). Symbols convey meaning by referring to a thing, idea or feeling, and thus are the means by which humans express mental representations and images. In children, the emergence of symbolic representation is an important step in the development of cognition, since it becomes not only an avenue by which children can show what they know about their world but also a means of integrating new experiences. Thus, the use of play materials such as dolls, blocks, and concrete art materials helps children develop a greater and more accurate understanding of their environment by allowing them to reproduce the realities of their experiences (Maxim, 1985; Reifel & Greenfield, 1982). Children's increasing reservoir of personal meanings about experiences, objects, and events is an important variable that affects the degree to which they can symbolically represent these realities. Another variable affecting children's representational abilities for using drawing symbols is the gradual development of stages of art that all children systematically follow in predictable sequence, as in other developmental areas. In addition, through practice, and repetition, children develop specific, recognizable symbols for specific, mental images, or referents. In time and with experiences, children's acceptance of appropriate referents changes and symbols are modified and become more complex (Smith, 1982).

It can be argued that the value of art lies in the contributions it makes to individuals' experience with and understanding of the world. However, research has shown that participation in art activities plays an important role in various areas such as development of visual perception, language, concepts formation, emotions, writing and reading, and even play. In drawing children transform

emotionally significant experiences in order to express and interpret them, to give observable forms to their inner worlds; in play children symbolize ideas and feelings, and thorough gestures and speech give these concreteness (Dyson, 1990). While drawing often is considered "constructive work" and separate from pretend play, there are those who study graphic symbolism and who stress the interaction between children and their own products. This dialogue between children and their drawing often includes other people; thus, children's skill in collaborative play and storytelling infuses their drawings (Dyson, 1989; Golomb, 1988; Rogers & Sawyers, 1988). The interaction of art activities and play was demonstrated by a study conducted in a center based environment where art was an important area. Children could draw their own representations of the subjects they were studying; some viewed the art activities as play and used them in that way. This was shown in the answer of one child when asked about the experience: "'It be play....Den you do your art...It be fun. You be learning 'bout art and soft sculpture and tigers and books and stuff'" (Branscombe, 1991, p. 112).

There are differences in how children select certain media to organize and interpret their world Some prefer storytelling and dramatic play and for them even drawing may serve as a dramatic medium. Children's understanding of the varied roles of people, symbolizing roles, through pretense occurs in drawing as well as in more obvious activities as in talk and play (Dyson, 1990). Dyson stressed the critical role of art and play in children's growth as symbol makers. Her observations of four- to eight-year-old children revealed children creating imagined worlds through drawing combined with talk, a combination that literally became a canvas for children's shared dramas. Though the children viewed themselves as drawing, they were involved in the complex negotiations of dramatic play. "Drawing combined with talk can quite literally become a canvas for children's shared dramas" (Dyson, 1990, p. 54). Thus children can paint the canvas of play collaboratively with their friends. Others have reported examples of children's pretend play during drawing (Mathews, 1984) and have stressed the importance of children's talk as an essential component of early artistic development (Thompson, 1990). While there is documented evidence of children's play in drawing, there are few studies that have focused on the specific types of play. Therefore, the purpose of this study was to investigate and

describe possible play behaviors of preschool children evident in language episodes and related drawings.

Basis and Questions for the Study Basis

This study emerged from a larger study that investigated children's computer graphics in terms of stages of art, symbolic representation (Escobedo & Bhargava, 1991) and children's play while using the computer (Escobedo, 1992). In order to analyze the play behaviors evident in the language and in children's drawings produced with traditional art materials, the following questions were formulated for this study: What evidence was there that children engaged in play activities while drawing? What types of play behaviors were evident? What language episodes were associated with the play behaviors? To answer these question, a descriptive design was utilized in the study. Certain parameters, or a framework, were devised from which to view play behaviors and related language episodes.

Included in the framework for this study was the idea of play as a creative activity, whether it is construction with objects, language, humor, imagination, or thinking and problem solving (Gottfried, 1985). Because of the general approach of the study that allowed the children involved to produce their drawings through play activities and self initiated ideas, it was necessary to make a distinction from the play orientation found in the literature that defines all pleasurable activity as play, even pleasurable work. The play theory used as basis of the study is one that proposes that exploration and manipulation are prerequisite to meaningful play experiences. Play is not exhibited until exploratory activity has occurred; in exploration children discover what the material does, in play they discover what they can do with the material (Fromberg, 1992; Rubin, Fein & Vandenberg, 1983). Further delineated by the affordance concept, the sequence of extracting information from materials through exploration follows three phases: exploration of material through inspection, to manipulation including experimentation if possible, and then to play, "...the kinds of elaboration of reality that qualify as play, such as the transformation of objects for constructive purposes, or for the creation of an imaginary or pretend world, appear after exploration" (Wohlwill, 1984, p.165). This sequence closely coincides with those related to art . The sequence for development of stages of art abilities -- Scribble, Basic Forms,

Pictorial stages -- goes through exploration and manipulation, to mastery and control, to meaningful representation (Mayesky, Neuman, & Wlodkowski ,1985; Smith, 1982).

There is support for the proposition that language is essential for artistic development; in addition, appropriate child-adult dialogue may provide understanding of artistic activity (Thompson, 1990). The shared cognitive basis for developments in language and symbolic play is the ability to symbolize, verbally or graphically; therefore, assessment of play can be used to judge the child's symbolic activity (McCune, 1985). This shared cognitive base is extended to include not only language and symbolic activity, but also cognitive development. Because play often includes or consists of purely symbolic activity, language is a possible indicator of the child's intentional play that is not evident from actions only. Such symbolic activities can include pretend play, imaginary activities, and humor which are usually oral interactions (Fromberg, 1990) as well as word games, play with words, and puns, which are based totally on language. By middle school the arbitrary, or conventional, nature of words is fully realized and children can play with these abstractions in jokes, puns and riddles (Athey, 1988). The significance of children's play with language itself is considered an important aspect of play. Researchers have suggested that children enjoy playing with language because it makes them feel in control; also, playing with language for sound repetition, as well as in riddles, jokes, and metaphors may have a poetic function (Fromberg, 1987).

Based on the orientation described above, the focus of this study was to examine children's drawings and related language episodes in order to differentiate those exhibiting play from those exhibiting exploratory behaviors . Those drawings categorized as play were further analyzed to identify possible different types of play: transformation of objects for constructive purposes or for imaginary purposes. Included also was identification of possible incidents of play with the language itself such as puns and humor, as well as games, make-believe, pretense, and imagination.

Methods and Procedure

The primary sources of data for the study were produced by four middle-class children, two males (a 4-year-old and a 5-year-old) and two females (a 4-

year-old and a 5-year-old). The data included 36 hours of video tapes, extensive observation and field notes, and 120 drawings produced with traditional art materials.

The setting included a drawing table arranged with concrete art materials (and two computers the data collected and reported in the previous studies). These included drawing, or scribble tools, such as crayons, marking pens and pads, and pencils; others were added to correspond to the weekly focus such as: patterned paper and wall paper, template tracing shapes, solid colored construction paper for background and scissors to cut shapes for foreground, and different textured paper and textured plates.

The data were collected during eight 90 minute sessions held weekly in an observation room of a College of Education. Videotapes were made of the activity at the art table and at the computers. Through observations and field notes careful documentation was kept of the process that took place at the art table with traditional art materials; the child's language and/or labels were recorded on the back of each depiction produced at the art table. Due to high interest in the computers during the sessions it was necessary to rotate two children every 15 minutes at each of the computers as time allowed with the remaining time spent at the art table. Four researchers were involved in collecting the data and writing notes after each session: One functioned as main teacher conducting the group instruction and supervising the activity at one computer, one supervised the other computer, one monitored the art table, and one observed and took field notes.

A child-centered, guided-discovery approach was used to introduce the children to art activities . No specific tasks were required, as it was expected that the children would initiate their own graphic work through play experimentations and manipulate the materials to create their own art works. This assumption was based on assertations that children's acquisition of certain skills is conditional upon discovery learning that allows the development and exploration of self-initiated projects (Papert, 1980). Weekly lesson plans based on broad topics, formulated prior to the study and modified as needed, guided the general direction of instruction for the sessions. Topics covered were: scribble, shape, and pattern tools, erasers and background, borders, overlapping, texture, and storage and memory capabilities. The lessons provided hands-on

demonstrations to introduce the children to the different concrete materials and to certain art concepts such as color, shape, background, overlapping, and actual and visual texture.

Data Analysis

Preparation of data prior to analysis included transcribing the audiotapes, entering the data into a word-processing file, and checking the verbal transcriptions against field notes and video tapes thus coordinating the language and actions of the children . The information was then coordinated with the appropriate drawings. The graphics were coded into appropriate categories as to evidence of play behaviors and types of play. Two coders independently reviewed and categorized both; interrater agreement was 97.5%.

The analysis of the data for play behaviors was based on comprehensive examination of field observations and field notes, careful review of the language episodes for evidence of play, and coordination of these with selected drawings. To answer the first question—"What evidence was there that children engaged in play activities while drawing?"-- differentiation between exploration and play behaviors was made. The transcribed video and audio tapes and the field notes were examined for evidence of intentional play behaviors that might or might not be evident in the graphics. The drawings were reviewed and categorized into Exploratory and non-exploratory categories, Manipulation and Meaningful Play . The findings from the original study (Escobedo & Bhargava, 1991) that established the graphics' evident categories for stages of art impacted this part of the present study as the stages of art closely reflected the sequence of emerging play behaviors: exploration and inspection were evident mostly in graphics categorized at the Scribbling stage, manipulation and experimentation were evident in graphics at the Basic Forms category, and symbolic play behaviors (including construction with objects and fantasy) in those at the Pictorial stage.

To answer the second and third questions—"What types of play behaviors were evident? What language episodes were associated with the play behaviors?"-- selected segments of the transcribed video and audio tapes related to drawings that gave indications of play behaviors were correlated and carefully examined for evident types of play . The language episodes associated with the

graphics were examined for intended purposes indicating play behaviors: construction, fantasy, and play with the language itself.

Results And Discussion

Analysis of the graphics and the descriptive data that 120 drawings were produced during the eight sessions. Differentiation between exploratory, non-play, and play behaviors were made for evidence of play behaviors while drawing, Question 1. Categorization of the drawings revealed the following percentages : 21.7% of the drawings were coded in the Exploration category, 10.8% in Manipulation; and 67.5% in Meaningful Play. Table 1 shows these percentages for play categories by subject.

Table 1. Percentage of Play Categories Exhibited in Drawings

	Exploratory	Manipulation	Meaningful Play	Totals
Leila				
%	15.0 %	4.2 %	0 %	19.2%
(N=)	(18)	(5)	(0)	(23)
Walter				
%	5.0 %	4.2 %	8.3 %	17.5%
(N=)	(6)	(5)	(10)	(21)
Kiah				
%	.8 %	1.7 %	27.5 %	30.0%
(N=)	(1)	(2)	(33)	(36)
Jeremy				
%	8 %	.8 %	31.7 %	33.3%
(N=)	(1)	(1)	(38)	(40)
Totals	21.7 %	10.8 %	67.5 %	100 %
(N=)	(26)	(13)	(81)	(120)

Further analysis of the descriptive data and the 81 drawings, 67.5%, categorized as Meaningful Play were further coded to explore the specific types of evident play behavior, Question 2. This analysis of the drawings, the language, and play episodes indicated evidence of transformation of objects for Constructive and Imaginative Play: in addition to the 32.5% drawings coded as Non-Play, 42.5% of the drawings were coded as Constructive Play and 25.0% as Imaginative Play. Table 2 shows percentages for types of play and totals for subjects.

Table 2 . Percentage of Types of Play Episodes by Subject

	Non-Play	Constructive Play Play	Imaginative Play	Totals
Leila				
%	19.16%	0	0	19.17 %
(N=)	(23)			(23)
Walter -				
%	9.17 %	6.66 %	1.67%	17.5 %
(N=)	(11)	(8)	(2)	(21)
Kiah				
%	2.5 %	19.17 %	8.33%	30.0 %
(N=)	(3)	(23)	(10)	(36)
Jeremy				
%	1.6 7%	16.67 %	15.0 %	33.33 %
(N=)	(2)	(20)	(18)	(40)
Totals	32..5%	42.5%	25.0%	100 %
(N=)	(39)	(52)	(29)	(120)

Maturational levels, often exhibited by chronological age, are thought to affect Stages of Art and also symbolic representational capabilities and levels of play (Smith, 1982; Werner & Kaplan, 1963; Wohlwill, 1984). The data coded for play categories evident in the drawings were analyzed by the two age levels represented by the subjects, 2 four-year-olds and 2 five-year-olds. Results revealed that graphics by the two younger children were categorized as 28.33% in the Non-Play category while those by the two older children were 4.17%. In the Play category the findings were reversed with graphics by the older children accounting for 59.17% and those by the two younger for 8.33%. Further analysis of the data for differences in Types of Play episodes in relation to age of children also indicated age differences in that the older children's graphics were more often coded as exhibiting Constructive Play at 38.84% and Imaginative Play at 23.33% as compared to the younger children Constructive Play 8.33% and Imaginative 1.67%. Thus, in this study there appeared to be age differences in that the older children had a greater number of graphics in the Play category, and used Imaginative Play more often than the younger children (see Table 3.).

Table 3. Percentage of Types of Play Episodes by Age

	Non-Play	Constructive Play	Imaginative Play	Totals
Four Year Olds				
Percent	**28.33 %**	**6.66 %**	**1.67 %**	**36.66 %**
(N=)	**(34)**	**(8)**	**(2)**	
Five Year Olds				
Percent	**4.17 %**	**35.84 %**	**23.33 %**	**63.34 %**
(N=)	**(5)**	**(43)**	**(28)**	
Totals	**32.5 %**	**43.5%**	**25.0%**	**100%**
(N=)	**(39)**	**(52)**	**(29)**	**(120)**

The elaborations of reality that qualify as play include the transformation of objects for constructive purposes or for the creation of an imaginary or pretend world (Wohlwill, 1984). In Constructive Play the child uses objects in attempts to create something, such as pictures, forms or objects; in addition, object oriented play involves not only what the child can do with an object but also derivation or imposing of novel meaning on objects and events. Results of this study indicated such transformations as the children created objects for Constructive and Imaginative purposes; included were every day objects such as envelopes, birds, and houses as well as transformations for pretending, games, and humor (see Table 4).

Table 4. Example of Play Transformation of Objects per Subject

	Jeremy	Kiah	Walter	Leila
Construction Realistic	Envelope Paper airplane House	Heart Bird Dinning	House with chimney, trailer, truck and toaster, house with smoke	Explored
Imagination Make believe	Marshmallow man, sun with face, snowman, invisible man			
Imagination Pretend	Tornado, a ghost, treasure map, ghost fly out of haunted house, invisible reading a book	Dribbles, a ghost, ghost sound, ghostly picture	A treasure map, confetti	
Imagination Play with language	Tornado, label on table, people on people, scribble scrabble, table lose lable, multi-media meteor	Lilly Leila, polka dot, making a dowse, squibble squabble, belly willy, willy silly, sparkle sparkle		Quack quack, willy silly, silly nilly, thanks for doing that
Imagination Games	Marshmallow man game, ghost game, a maze game, TV Pat Sajack	Ghostly game, a game card		
Imagination Humor	Teasing about picture and reminding him of nothing, multimedia called meteor shower			
Imagination Joking	An Easter joke			

The transcribed language correlated with corresponding drawings and associated with play episodes, Question 3, confirmed not only the intentional play behaviors indicated in the graphics, but also the children's use of language for play with the language itself. Examples of the graphics and the associated language are presented below. This discussion is based on two major topics: transformation of objects for construction, and transformation of objects for pretense and imaginary purposes; games, humor, play with words/language, imagination, pretense and problem solving are incorporated when appropriate. The following figure is a drawing at the Construction level of play and was produced by the youngest male; associated language follows. As Walter discovered similarities between shapes in his drawings and familiar articles, he elaborated to construct other objects at the reality level with some imagination as shown in Figure 2 and related language.

Language 1: Constructive Play, Reality Level and Imagination
(Walter had been scribbling with different shapes, some resembling bricks.)

Walter	I'm gonna make a whole city.
David	A whole city?
[Jeremy	I can make one too!]
David	Where is your city at? Where is it gonna be? Is it the city that we live in, or is it another city? (Walter continues drawing.)
Walter	It's the city that we live in.
David	What part of the city?
Walter	The part that we live in.
David	Oh, I see. Are those buildings?
Walter	Yup. All the buildings go up.
David	Um hum. How many buildings do you have?
Walter	One. I haven't built it. (- - -)
Walter	I built my city, my city is almost finished.
David	. . . y o u.
Walter	My city is one city. Everybody lives in this building!
David	Oh, it must be a pretty big building, huh?
Walter	Yes, that's why it has so many windows.

David	Mmmm. Can I write on here that this is your city?
Walter	Yup.
David	Should I put the city that we live in? Or just the city?
Walter	No, just put, a, just put this is the city that we live in and this is Austin, TX.
David	OK.

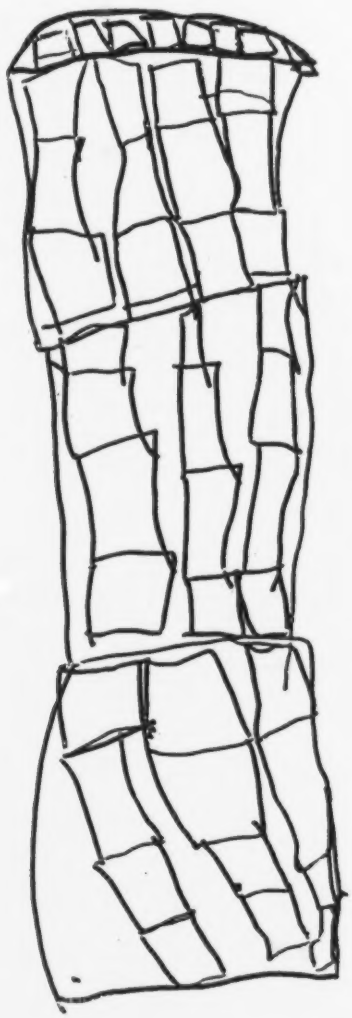

Figure 1. Example of transformation of objects for Construction and Imagination: Walter, City in One Building

The incident began with Walter exploring with different shapes as Figure 1 shows. Some of the shapes became the focal point for the Constructive Play that followed when Walter discovered similarities between shapes and bricks and made the transformation from the objects to Construction activity; Imagination is displayed in that he installed a whole in one building. Walter's explorations often elicited ideas that led to construction and transformation of objects to other objects. While not evident in this episode, he often demonstrated differentiation between reality and fantasy, a development that occurs through play (Fromberg, 1987).

The two older children often exhibited imaginary and pretend play that included transformation of objects for constructive purposes and for creation of pretend experiences and imaginary worlds. Evident also were play with words, humor, and games. The creation of an imaginary or pretend world is a significant characteristic of play and involves its transformational possibilities as related to objects, events, and activities; games are considered part of these possibilities for children with the exception of games-with-rules which is common in older children and adults (Gottfried, 1985). In addition, the verbal language associated with pretend play is important in that pretense is usually an oral interaction and the language provides powerful insights as to intentional behavior (Fromberg, 1990).

In the following dialogue, Kiah, the oldest female, exhibited her inclination to play guessing games while constructing objects or scenes. On this occasion, she had been using her guessing game procedure with the teacher which usually started with a comment such as:

Language 2: Constructive and Imaginative Play-Guessing game

Kiah	Bet you can't guess what I'm drawing.
Teacher	A flower. (Kiah continues drawing.)
Kiah	Look! Now! Ba, it starts with a B now guess what this is? It starts with a B . . .
David	(pause-thinking) A beetle?
Kiah	Nope.
David	No?

Kiah	Cause look! (David talks to Leila) It's not a beetle, it's not a bee.
David	It's a very colorful too.
Kiah	I t ' s n o t a bee, it's not a um, it's not the other one, so guess what it is?
David	A BUTTERFLY!
Kiah	Yup!
David	It's a butterfly, ooooh!
Kiah	Can you write butterfly?
David	Oh sure, let me write it with my pencil! Can I borrow you pencil, and I'll give it right back to you? B u t t e r f l y.
Kiah	Write it big . . . so I can see.
David	OK. Are you going to put anything else in your picture?
Kiah	Nah!

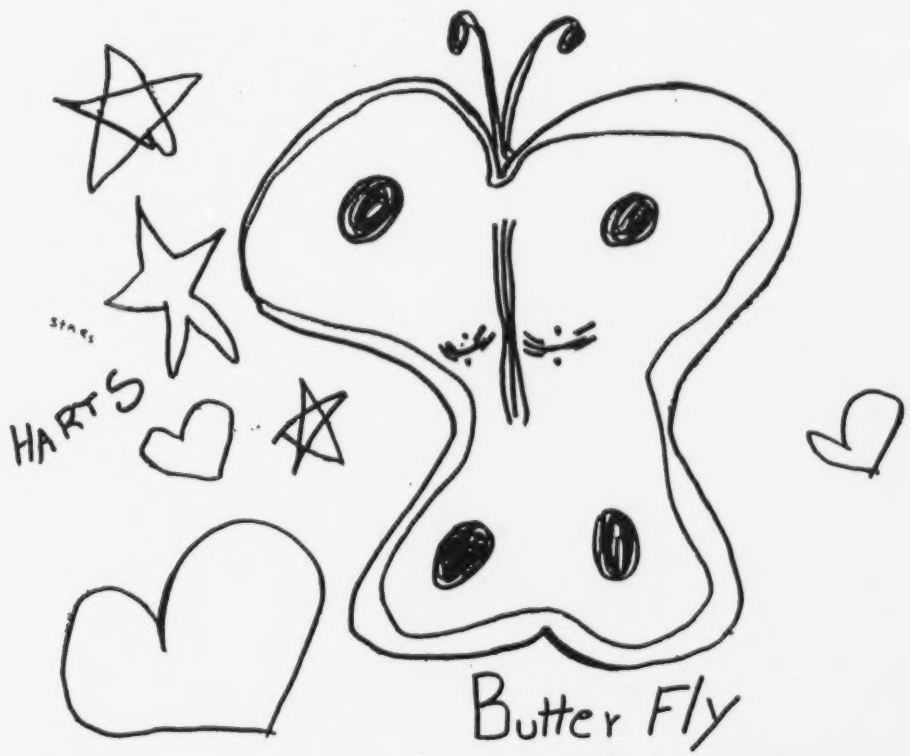

Figure 2. Example of transformation of objects for Construction and Imagination, Games: Kiah, Butterfly

Kiah's drawing illustrates the transformational possibilities of play as related to objects and games. While the drawing is Construction, the language indicates Games, part of Imagination category. The language provides insight into her creation that involved not only the drawing and guessing game but also exhibited her knowledge of letter sounds; emergent literacy evidence is clearly present.

In pretend play children make assertions about important aspects of experience and illustrate their ability to explore invented worlds not constrained by the immediate situation or by actual experience. It is argued by some that the meaning of pretense consists of ideas and images retrieved from long-term memory and of novel combinations of these ideas and images. The player also makes mental claims about the reality of these images, denies they are inventions and insists that they exist in the concrete reality of the here and now. The player simultaneously affirms the playfulness of these claims and indicates he is not to be taken seriously. Thus, children establish the play frame through metacommunications (Fein & Schwartz, 1986). Jeremy, the oldest male, often combined his drawings with humor and exhibited a preference for developing imaginary and improbable scenes.

Language 3: Imaginative Play, Pretend

Jeremy	Who's reading the book? Who's reading the book? An invisible man! An invisible man is reading the book.
Jeremy	You see the book is in the air, and then the invisible man is reading it.
Gilstad	Where, where is the invisible man?
Jeremy	You can't see him, he's invisible!!
Gilstad	But I think I see him.
Jeremy	Where?
Gilstad	He's holding the book isn't he?
Jeremy	Yeah, and he's reading it!
Gilstad	He is? What's the name of the book?
Jeremy	The haunted lock-nest.
Gilstad	The haunted lock-nest?
Jeremy	Yeah.

Gilstad That sounds like an interesting book.

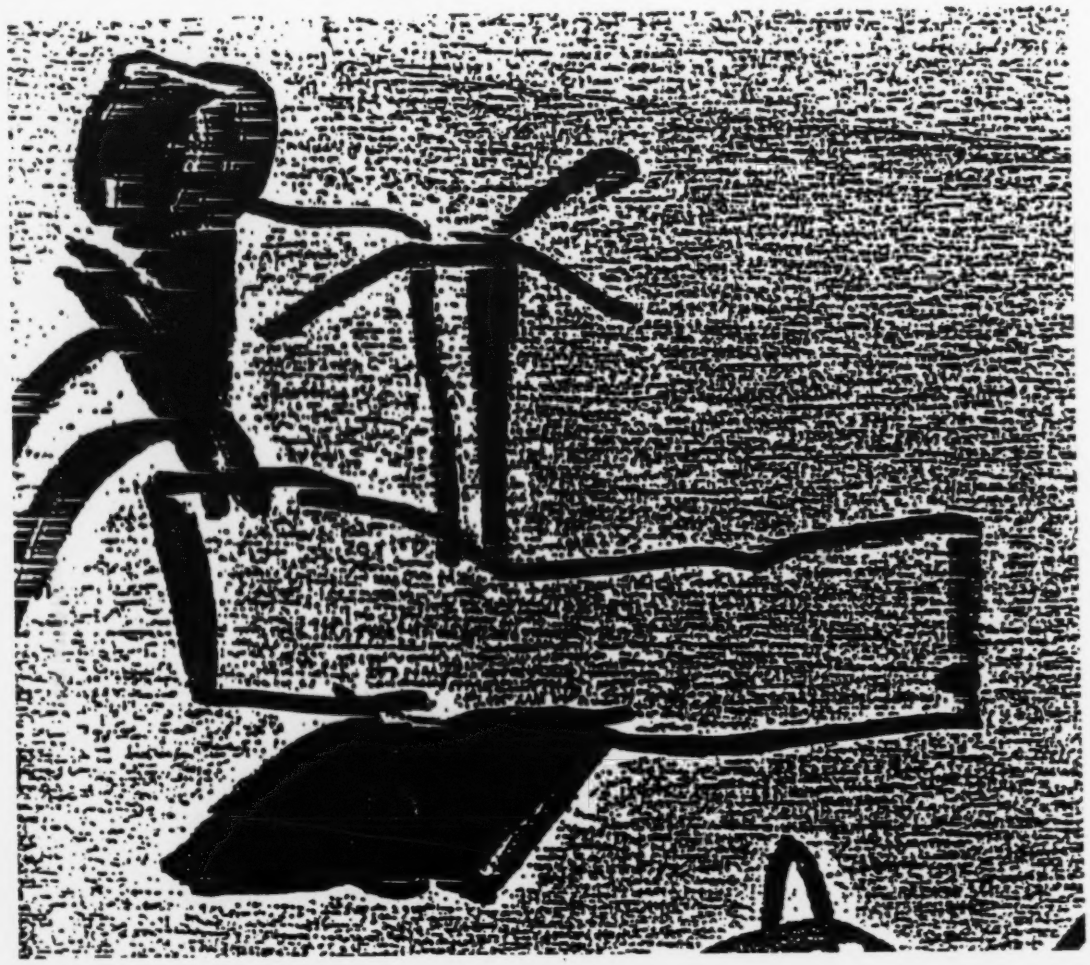

Figure 3. Example of transformation of objects for Imagination, Pretend: Jeremy, Invisible Man Reading a Book

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In the graphic and the language of this episode Jeremy exhibited transformation of objects for construction of an imaginary scene that is totally improbable and included humor and play with the language itself. The first two lines of his dialogue show an inclination toward poetic verse and play with words as he initiates establishment of the playframe. Humor, considered a form of intellectual play with ideas, "...results from the playful production of fantasy incongruities when relatively greater attention is given to the impossibility or (at later ages) the improbability or inappropriateness of the imagined event" (McGhee, 1984, p.221). Jeremy clearly indicates the playfulness and impossibility of the situation as the teacher responds and enters the playframe; the episode also exhibits play with the language in the reference to the name of the invisible book.

Early pretend play focuses on simple substitution of pretend objects for real ones but later children are able to rely more on their own imaginations and symbolic constructions. It is believed that there are several types of pretend play including fantasy and sociodramatic play and that pretense has positive effects on aspects of intellectual and social development including creativity and imaginativeness, problem solving, as well as on emotional development (Saltz & Saltz, 1986). The following language and related drawing illustrate Jeremy's facility in developing imaginary worlds.

Language 4: Imaginative Play, Imaginary scene

Jeremy	Haunted houses, houses really have ghostes in em! I'm going to make one flying out the window.
	pause See, see how the smoke is scribbles. It's like a ghost flying out...
Jeremy	Me stop, me heard ghost under table!
Yeatman	You heard a ghost under the table?
[Kiah	Ooooooooooooooo!]
Jeremy	Ooooo, auh, auh, auh. (Long while passes and Gilstad comes in.)
Gilstad	Oh, what is this?

Jeremy It's a haunted house. ... See, this is a ghost. ... And I'm gonna draw some more smoke coming out of the chimney. There's fire in the chimney.

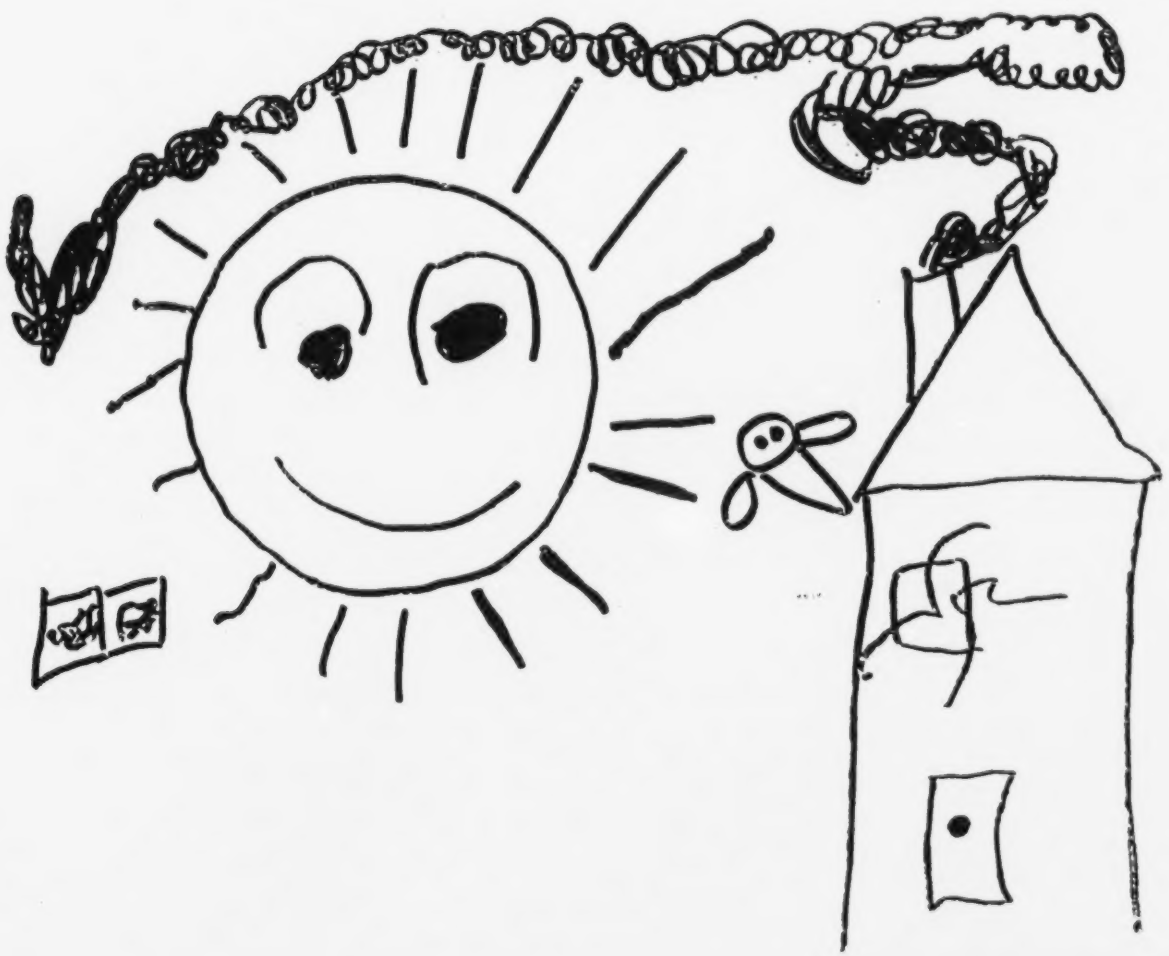

Figure 4. Example of transformation of objects for Imagination, Imaginary Scene: Jeremy, A Haunted House

Jeremy's drawings often indicated creations of imaginary or pretend worlds, a significant characteristic of play involving transformational possibilities. This is illustrated in this and his other imaginary depictions which seem to rely almost totally on his imaginations and symbolic constructions; these were much beyond the early substitution of pretend objects for real ones. This episode also indicates not only pretend play including fantasy but also sociodramatic play as he, with Kiah joining in, assumes the role of the ghost to provide ghostly sounds.

Collaborative play in drawing combined with children's talk becomes a shared drama, as reported by Dyson (1990) of children in her study; for some children drawing serves as a dramatic medium as they portray their understanding of the varied roles of people. The social interaction revolving around art and play provides a critical element in children's growth as symbol makers and such verbalization is basic to emerging literacy. In the following episode Kiah initiated the action by drawing a house which turns into a haunted one with the children joining the drama.

Language 5: Imaginative and Collaborative play/drawing

Kiah	This is going to be something NEAT! (continues drawing) *long pause*
	(singing) Me making a house. We're making a dowse.
Leila	You did that!
Kiah	Me not do that.' (Walter enters argument about what Kiah did to Leila.'s paper.) ...
Leila	When I did the paper was like that! And I did want it like that!
Kiah	I didn't put it like that either! A ghost did!
Leila	Not it didn't did it!
Kiah	A g h o s t, oh weeeeeeeee!
Yeatman	A ghost?
Kiah	Ooooooooooooh.
Yeatman	Are you pretending to be afraid?
Kiah	Oooooooooooooo. That doesn't make me scared. Oo oo oo auh auh auh auh!!
Jeremy	He behind me? He behind me! (in baby talk)

Kiah	No not see nobody there!
Jeremy	Oh yeah, well you can *look under * the table, there's somebody there!
	(all of a sudden he screams—in fear of the ghost— and the others join in and the giggling)... (very loud)
Walter	Jeremy really s h o u t e d!
Yeatman	He's really loud. It hurt my ears.
Walter	Kiah too.
Kiah	When Jeremy did that it made me scream . *I saw under* the table.
Jeremy	Scardie cat you were afraid of me! (singing)
Leila	Auhhhh.
Jeremy	Scardie cat, you were afraid of me too. ...(Pause)

Figure 5. Example of transformation of objects for Imagination, Collaborative Play, Pretend, Drama: Kiah, Ghost House

The house turns into a ghost house when Kiah pretends that she did not draw on Leila's paper, and that instead it was a ghost that did it. Jeremy joins Kiah and Leila in the social drama while Walter comments on the action. This episode reflects Dyson's (1990) assertation that children create imagined worlds through drawings combined with words which become shared dramas; these become a canvas of play that children can paint collaboratively with their friends.

It has been suggested by some researchers that in pretend play older children rely more on their own imagination and symbolic constructions than on objects (Saltz & Saltz, 1986), that older children provide more verbal explanations about their actions in current and forthcoming play activities (Fein & Schwartz, 1986), that the play of older children is more diverse and complex (Fein, 1985, in Fromberg, 1987), and that older children spend a greater proportion of their time in higher forms of play. However, it may be that different children who engage predominantly in exploration and others in play are reflecting two modes of orientation towards the world: one based on seeking out information and the other on transforming reality at the level of fantasy. But when there is uncertainty or information to be extracted, exploratory activity will take precedence over play (Wohlwill, 1984), a finding noted in this study when new procedures were introduced.

Conclusions and Implications

The children's computer drawings and related language episodes demonstrated their use of materials through a progression of behaviors that included Exploration, Manipulation for the purpose of extracting information, and Meaningful Play behaviors. For data analysis purposes, the data were collapsed into two major categories, exploratory or Non-Play and non-exploratory or Play. The exploratory behavior was more predominant for the younger children. The children's drawings and related language episodes demonstrated their use of the computer for two types of play: transformation of objects for Constructive Play and for Imaginative Play that included creation and depiction of various fanciful worlds that involved games, play with words, as well as pretense, imagination and shared dramas. Thus, findings from this study confirm those reported by others that given appropriate activities, children engage in various play activities while drawing. Further, through symbolic play the children were able to create

their own reality, an important aspect of play (Reifel & Greenfield, 1982). There was a noted age difference favoring the older children for Play behaviors versus exploratory and for greater transformation of objects for Imaginative purposes versus Constructive. The drawings produced by the two younger children included evidence of drawings reflecting more Constructive Play than Imaginary Play. Much of their play while drawing consisted of exploratory play through manipulation and experimentation, consequently fewer of their graphics were in the Play category. The two older children's graphics indicated drawings for creations of various imaginary scenes such as ghost houses and the invisible man. While they too utilized exploratory play to extract information about new procedures, more of their drawings were in the play category. Some researchers cite age differences as related to exploration and play behaviors; however, others tend to see this difference as dependent on individual orientation. This finding implies that there are age differences that should be taken into account when providing art experiences and materials for children.

In summary, there was evidence of Play behaviors while drawing ranging from Non-Play exploratory to Manipulation and Meaningful Play. Evidence was observed for transformation of objects for Constructive Play and for Imaginative Play which included Pretend, Imaginary scenes, Games, and Collaborative Play. There was an age difference favoring the older children for Meaningful Play and transformation of objects for Imaginative Play. Review of the descriptive data, including transcriptions of the language indicated that the children engaged in collaborative play while drawing. There was also indication that for some children drawing serves as a dramatic medium; this was especially evident in episodes of the older male. This finding reflected the assertation that "As children grow as symbolic players...they paint the canvas of play collaboratively with their friends (Dyson, 1990).

The descriptive nature of this study prohibits generalizations. However, it can be implied from this study, and as reflected in other studies (Dyson, 1990; Mathews, 1984) that children can use art activities in playful and fanciful ways while learning different procedures and materials and when allowed to approach the experience in a child appropriate manner. Important implications for teachers are that developmentally appropriate strategies are needed for children's drawing as part of language and emergent writing development. Attention should be

given to providing sufficient duration of experiences and of time for children to explore the medium, materials, and to learn to use these. It can be implied from this study that young children, in drawing, depend on play and its various dimensions in the same ways as when learning about any other play materials. Adults and teachers should strive to maintain an atmosphere conducive to aesthetic responses, to sensory experiences and related language, and should exhibit positive, encouraging attitudes. As in any situation, artistic play should be fostered by an environment that encourages and supports playfulness through a child-centered, discovery approach. If experiences provide materials that are seen as open-ended to be explored and experimented with, children will be able to play with them and construct their own micro-worlds for imagination and constructive purposes, whether these be construction of substitute objects, of language, or of their own concepts and knowledge.

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